

# *Montana Comprehensive Assessment System (MontCAS CRT)*

GRADE 6  
COMMON RELEASED ITEMS  
SPRING 2011



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Montana  
**Office of Public Instruction**  
Denise Juneau, State Superintendent

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# Reading Directions

This Reading test contains three test sessions. Mark or write your answers in the Answer Booklet. Use a pencil to mark or write your answers.

This test includes two types of questions: multiple-choice and constructed-response questions.

For the multiple-choice questions, you will be given four answer choices—A, B, C, and D. You are to choose the correct answer from the four choices. Each question has only one answer. After you have chosen the correct answer to a question, find the question number in your Answer Booklet and completely fill in the circle for the answer you chose. Be sure the question number in the Answer Booklet matches the question number in the Test Booklet. The example below shows how to completely fill in the circle.

CORRECT MARK	INCORRECT MARKS
<input checked="" type="radio"/>	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>

If you decide to change your answer to a question, erase the wrong mark completely before filling in the circle of the new answer. Be sure you have only one answer marked for each question. **If two circles are bubbled in for the same question, that question will be scored as incorrect.**

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For the other types of questions in the Test Booklet, you will be asked to write your answers in the box provided. Read the question carefully. If a question asks you to explain your answer or to show your work, be sure to do so.

You may make notes or use highlighters in your Test Booklet, but you must bubble or write your final answers in your Answer Booklet. **Do not make any stray or unnecessary marks in your Answer Booklet.**

Let's work through a sample question together to be sure you understand the directions.

## Sample Question

1. What is the capital of Montana?
  - A. Browning
  - B. Glendive
  - C. Helena
  - D. Missoula

# Reading

*Read the poem about falling snow and then answer the questions that follow.*

## Snowfall

Who shook the night  
And made the feathers  
Fly?  
They fall and lift and fall  
5 Without a sound.

And as I stand  
Beneath the street lamp,  
I can scarcely tell  
The rooftop from the ground.

10 Who tipped the night?  
Who let the feathers whirl?  
They circle softly  
Round and round this place,

And blur the footsteps  
15 Of a little girl,  
And frost her hair  
And melt upon her face.

—*Barbara Juster Esbensen*

1. Which word means the same as scarcely as it is used in line 8?
  - A. barely
  - B. calmly
  - C. easily
  - D. shortly
2. In lines 8 and 9, why is it hard for the speaker to tell the rooftop from the ground?
  - A. She is too far away.
  - B. The night is too dark.
  - C. She is inside her house.
  - D. There is so much snow.
3. The lines “They circle softly / Round and round this place” suggest that the snowflakes are
  - A. amusing.
  - B. exciting.
  - C. graceful.
  - D. powerful.
4. In the poem, which image represents the falling snow?
  - A. the blurred footsteps
  - B. the frost on the girl’s hair
  - C. the light from the street lamp
  - D. the circle of whirling feathers
5. Which words from the poem show that the snow is getting deeper?
  - A. “shook the night”
  - B. “as I stand”
  - C. “circle softly”
  - D. “blur the footsteps”
6. How does the poet **most likely** feel about the snow?
  - A. She wishes it would stop.
  - B. She thinks it is dangerous.
  - C. She finds it fascinating.
  - D. She believes it is imaginary.
7. Which method **best** describes how the poem is arranged?
  - A. with questions followed by descriptions
  - B. with problems followed by solutions
  - C. from real to imaginary events
  - D. from the past to the present

*Elsa is spending the summer at her grandparents' house on Lake Huron in Michigan. Read the passage about living near the Great Lake, and then answer the questions that follow.*

## **The Great Lake**

*Gloria Whelan*

*Its jeweler's window  
offers bright stones,  
wheedles me with shells.*

*Its little waves  
lick me like a dog,  
sing me to sleep.  
But the selfish lake  
never lets me  
see the secret  
of its other shore.*

The last thing I hear at night before I fall asleep is the sound of the waves slapping against the shore. The first thing I see in the morning is the reflection on my ceiling of sun glittering on the water.

For a long time I was afraid of the lake, but I loved its wide, sandy beach. I'd climb down the stairway to the beach, past the pump house where the water from the lake is pumped up to our cottage, and past the poison ivy. When I first came, Grandpapa showed me the three green leaves you have to watch out for. I forgot all about it, and one evening there were itchy blisters all up and down my legs. Grandmama mixed up baking soda and water and put it on the blisters. After that I was careful to watch where I walked.

- 3** You can sit on the beach where the sand is dry and start digging. When the hole in the sand gets deep enough, water creeps into the hole. It's as if the lake is hiding, just waiting for you to find it.

You can walk for miles along the beach. Every few feet you find something to keep. The top of my dresser was heaped with things leaking sand: snail shells to turn into bracelets, gulls' feathers, tangles of driftwood. My favorite finds are the pieces of glass that have been in the lake for years and years. The water and the sand have rubbed all the sharp edges smooth.

I'd see a pretty stone or shell in the lake and reach for it. When a wave chased me, I'd jump back. It was as if someone were offering you a piece of candy and when you put your hand out for it they snatched it away.

Finally I made myself stand there and let the waves wash over my legs and splash my bathing suit. Little by little the lake invited me into it. I got so that I laughed at the waves, diving into them and letting them carry me back to shore. I floated facedown, my eyes open. I watched bubbles gurgle up from clam shells and snails inch along the slippery stones. Minnows came and nibbled at my toes.

I know there will be days when I am still afraid of the lake. Days when the storms come. Days when the waves leap and foam, striking the beach and rushing out again to become more and bigger waves. Days when the fishing boats head for the pier. On those days I'll hurry inside.

8. In the poem, the description of the lake as a “jeweler’s window” that “offers bright stones” suggests that the lake is
- A. playful.
  - B. inviting.
  - C. very sunny.
  - D. like a friend.
9. What does the first paragraph **mostly** describe?
- A. the reason Elsa came to the lake
  - B. the effect the lake has on Elsa
  - C. how long Elsa has been at the lake
  - D. why Elsa gets little sleep at the lake
10. What is the **best** replacement for the word creeps as it is used in paragraph 3?
- A. drips steadily
  - B. flows loudly
  - C. rises slowly
  - D. spreads widely
11. Which sentence from the passage shows that Elsa is becoming comfortable with the lake?
- A. “You can sit on the beach where the sand is dry and start digging.”
  - B. “It’s as if the lake is hiding, just waiting for you to find it.”
  - C. “When a wave chased me, I’d jump back.”
  - D. “I floated facedown, my eyes open.”
12. Elsa’s thoughts and actions at the lake show that she is very good at
- A. observing her surroundings.
  - B. finding her way around.
  - C. following directions.
  - D. helping others.
13. In which sentence does the author use personification to describe the lake?
- A. “For a long time I was afraid of the lake, but I loved its wide, sandy beach.”
  - B. “It’s as if the lake is hiding, just waiting for you to find it.”
  - C. “The water and the sand have rubbed all the sharp edges smooth.”
  - D. “I watched bubbles gurgles up from clam shells and snails inch along the slippery stones.”
14. “The Great Lake” is **best** described as which style of fiction?
- A. descriptive
  - B. historical
  - C. humorous
  - D. suspenseful

Read this passage about white chocolate. Then answer the questions that follow.

## The Other Chocolate

Sherrill Kushner

It looks like a pale version of chocolate, tastes creamy and sweet, and forms solid bars. It melts at body temperature, comes from cacao beans, and is processed like chocolate. It is even called chocolate. But, white chocolate isn't *really* chocolate. Who says so?! And why?

### It's Official

Governments around the world create identity standards or legal definitions for food products sold in their countries. The United States does this through the Food and Drug Administration (FDA). The FDA ruled that white chocolate is not true chocolate because it lacks a key ingredient, chocolate liquor (also called cocoa paste), which gives chocolate its brown color and distinctive chocolate taste.

To better understand what white chocolate is, let's look at the three basic types of chocolate and their ingredients. These, of course, are dark (also called plain), milk (lighter brown in color), and white (ivory white to deep yellow). Dark chocolate consists of chocolate liquor, cocoa butter, sugar, and sometimes lecithin. Milk chocolate is like dark chocolate with milk added. And white chocolate is made of sugar, milk, vanilla, and cocoa butter, the only ingredient it uses from the complex chocolate-making process. The color of white chocolate varies, depending upon how much cocoa butter it contains.

### Why Call It Chocolate If It's Not?

The Food and Drug Administration recognized that most people were using the name "white chocolate" even though manufacturers were required to label it "summer coating" or "white confectionery" since it wasn't really chocolate. That was confusing. The FDA also thought that white chocolate would be easier to sell in other countries if the United States called it by the same name used in other places.

In 2002, the FDA changed its mind and allowed the name white chocolate to be used beginning Jan. 1, 2004. The time lapse allowed manufacturers to make labeling changes on their products. The FDA also insisted that the product contain a minimum amount of each chocolate ingredient. Manufacturers could not skimp or substitute lower-quality ingredients, such as by replacing cocoa butter with cheaper vegetable oil. White chocolate must contain at least 20 percent cocoa butter, 14 percent milk solids, 3.5 percent milk fat, and not more than 55 percent sugar (or other sweetener). No food coloring is allowed. Some national companies manufacture "white morsels" that have no cocoa butter in them and therefore cannot be called white "chocolate." Check the ingredients list on the back of morsels packages to determine if a product is *really* white chocolate.

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## A Morsel of History

White chocolate was first introduced by the Nestlé Company in Switzerland in the 1930s. It was called “galak,” derived from the Greek word *gala*, which means milk (the same root is used for the word galaxy; ours is known as the Milky Way).

In the 1940s and 1950s, a few white chocolate bars were sold in American stores, but white chocolate didn’t really become popular in the United States until the 1980s. Today, white chocolate candy and snacks covered or dipped in white chocolate are commonly sold. White chocolate chips and chunks are used in many dessert recipes.

But some traditional chocolate lovers still say that white chocolate tastes like cooked milk. It is creamier and sweeter than other chocolate. According to the Chocolate Manufacturers Association, 65 percent of American chocolate eaters prefer milk chocolate to either the dark or white versions. This is true for chocolate eaters worldwide, who describe white chocolate as just too sweet.

## Chemically Speaking

The chemical composition and properties of white chocolate differ from those of other chocolates. First, white chocolate has negligible caffeine, a stimulant that some people don’t want. This isn’t really a reason to prefer white chocolate, as the amount of caffeine in dark or milk chocolate is very small.

People who are watching their weight won’t benefit by eating white chocolate either. All chocolate has about the same amount of fat and calories. However, based on recent studies, the darkest chocolate contains the most antioxidant flavenols, which fight cell damage leading to cancer and heart disease. White chocolate has none of these.

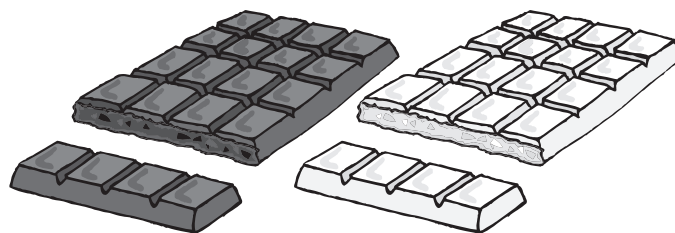
Also, white chocolate has to be melted more carefully than other chocolate. It burns quickly and must be warmed slowly over low heat to prevent its milk solids from clumping and making a lumpy mess. When white chocolate hardens, it is softer than other hardened chocolate.

12

White chocolate also goes rancid more quickly, so it is even more important to keep it in a cool, dark place, covered in foil with a dark outer wrapper. If properly stored, white chocolate can be good for 6 to 10 months, while the darkest chocolates can last for up to two years.

White chocolate has the advantage of not showing “chocolate bloom,” white flecks that appear when the fat separates and rises to the surface of chocolate. The bloom doesn’t change the taste and isn’t harmful, but it looks unappetizing on brown chocolate.

Can’t decide if you prefer white or brown? Some cooks and candy-makers use white and brown chocolate together to make a pleasing, multicolor treat that requires no decisions. Enjoy!



15. Why did the FDA decide to allow “white confectioneries” to be called “white chocolate”?
- A. to make the product seem more delicious
  - B. to more accurately describe the product
  - C. to allow companies to keep their product labels
  - D. to help companies sell the product internationally
16. White chocolate chips are different from “white morsels” because the chips
- A. are made with cocoa butter.
  - B. are smaller than morsels.
  - C. are made with chocolate liquor.
  - D. are darker than morsels.
17. In paragraph 5, the word skimp means
- A. spend money on.
  - B. use too little of.
  - C. add extra time to.
  - D. give facts about.
18. What is the **main** idea of the section called **A Morsel of History**?
- A. White chocolate was invented in Switzerland.
  - B. White chocolate was first made by the Nestlé Company.
  - C. White chocolate has been slow to grow in popularity.
  - D. White chocolate tastes like sweet cooked milk.
19. Based on paragraph 12, something is rancid when it is
- A. burned.
  - B. darkened.
  - C. hardened.
  - D. spoiled.
20. “Chocolate bloom” can be a problem because it changes the way
- A. brown chocolate looks.
  - B. brown chocolate tastes.
  - C. white chocolate hardens.
  - D. white chocolate melts.
21. The **main** purpose of this passage is to
- A. tell the history of chocolate.
  - B. describe a particular type of chocolate.
  - C. convince the reader to try white chocolate.
  - D. describe the taste of white chocolate.

22. Which sentence from the passage contains an opinion?
- A. “White chocolate was first introduced by the Nestlé Company in Switzerland in the 1930s.”
  - B. “But some traditional chocolate lovers still say that white chocolate tastes like cooked milk.”
  - C. “The chemical composition and properties of white chocolate differ from those of other chocolates.”
  - D. “All chocolate has about the same amount of fat and calories.”
23. The author **most likely** chose the title “The Other Chocolate” to suggest that white chocolate is
- A. creamier than other types of chocolate.
  - B. a poor substitute for other types of chocolate.
  - C. superior to other types of chocolate.
  - D. less common than other types of chocolate.
24. Which statement **best** describes the author’s approach to writing this passage?
- A. She presents facts so readers can make their own decisions about chocolate.
  - B. She tries to convince readers that one kind of chocolate is better than the other.
  - C. She describes chocolate in ways meant to make readers want to buy some.
  - D. She tries to show readers how foolish it is to compare kinds of chocolate.
25. Which book would **most likely** include recipes that use white chocolate?
- A. *Best Cookie, Candy, and Dessert Recipes*
  - B. *Recipes from One Hundred Years Ago*
  - C. *Some Sweet Foods Are Good for You, Too*
  - D. *The History of Cooking in America*
26. Which Internet site would **most likely** provide information about the FDA?
- A. a site describing how international food trading takes place
  - B. a site explaining how different types of foods are manufactured
  - C. a site describing how the government regulates the food supply
  - D. a site explaining how companies develop recipes for their foods

27. Explain the main differences between white chocolate and brown chocolate. Use details from the passage to support your answer.

### Scoring Guide

Score	Description
4	Response contains a thorough explanation of the main differences between white chocolate and other kinds of chocolate. Explanation includes specific, relevant information from the passage.
3	Response contains an explanation of the main differences between white chocolate and other kinds of chocolate. Explanation includes supporting information from the passage, but lacks specificity, relevance, and/or development.
2	Response contains a partial explanation of the main differences between white chocolate and other kinds of chocolate. Explanation includes limited information from the passage and/or is partially correct.
1	Response contains a vague or minimal statement of the main differences between white chocolate and other kinds of chocolate.
0	Response is totally incorrect or irrelevant.
Blank	No response.

### Scoring Notes

An explanation of the main differences between white chocolate and other kinds of chocolate may include, but need not be limited to:

- Recipe is different—does not include chocolate liquor, does include vanilla, milk, and cocoa butter.
  - White chocolate has less caffeine.
  - White chocolate contains no antioxidants.
  - White chocolate is sweeter.
- In the way white chocolate needs to be handled:
  - White chocolate needs to be melted more slowly—it burns more quickly.
  - White chocolate can become spoiled more quickly, and needs to be covered; it does not last as long as milk and dark chocolate.
- White chocolate does not “bloom”—that is, it does not get white spots on it like other chocolates do.

Other explanations are acceptable if they are supported by the text.

White chocolate is different from brown chocolate for a couple of reasons. One reason is because it has vanilla in it. White chocolate does not have chocolate liquor like brown chocolate. Brown chocolate can sometimes have lecithin in it, but white chocolate does not contain lecithin. No food coloring is allowed to be used in white chocolate. White chocolate is also sweeter and more creamy than brown chocolate. Another way that it is different is that it has negligible caffeine. White chocolate has to be melted slower and more carefully than others. Dark chocolate can stay good for up to two years but white can only last six to ten months. When white chocolate hardens, it is softer than brown chocolate. There are many reasons and ways that white chocolate is different from brown chocolate, but these are just some of them.

The main differences between white chocolate and brown chocolate here are some. White chocolate does not have chocolate liquor, brown chocolate does. White chocolate has negligible caffeine, the amount of caffeine in brown chocolate is very small. White chocolate has to be melted very carefully because it burns very quickly. It must be warmed slowly on low heat this helps prevent the milk solids from clumping, if it does clump it will make a lumpy mess. Those are the differences between white chocolate and brown chocolate.



## Example of Score Point 2

There are several differences between white chocolate and brown chocolate. One difference is that white chocolate will go bad fast if not stored correctly. Brown chocolate can stay good for up to two years. The main difference is that white chocolate doesn't have chocolate liquor, and brown chocolate does.

### Example of Score Point 1

The differences between white and brown chocolate are that white spoils more easily, they are different color, they taste different, and have different ingredients.



### Example of Score Point 0

White Chocolate has white flecks that appear  
when the fat separates and rises. Chocolate has  
the same thing happen to it.

# Mathematics Directions

This Mathematics test contains three test sessions. Mark or write your answers in the Answer Booklet. Use a pencil to mark or write your answers.

This test includes three types of questions: multiple-choice, short-answer, and constructed-response questions.

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Let's work through a sample question together to be sure you understand the directions.

## Sample Question

1. Montana is the **fourth** largest state. How many states are larger than Montana?
  - A. 1
  - B. 3
  - C. 10
  - D. 42

## Mathematics (No Calculator)

1. Which number is equivalent to  $4 \times 4 \times 4 \times 4 \times 4 \times 4$ ?

A.  $4^4$   
B.  $4^6$   
C.  $6^4$   
D.  $6^6$

2. Kurt went on a bird-watching trip with his class. The class saw 20 different birds, and 30% of the birds were great blue herons. How many great blue herons did the class see?

A. 3  
B. 6  
C. 10  
D. 15

3. The table below shows the scores Shane received in four events at a gymnastics meet.

**Shane's Gymnastics Scores**

Event	Score
Vault	9.125
Rings	9.069
High bar	9.095
Parallel bars	9.25

In which event did Shane receive the **highest** score?

A. Vault  
B. Rings  
C. High bar  
D. Parallel bars

4. Tim served  $\frac{6}{10}$  of a pie to his guests. Which fraction is equivalent to  $\frac{6}{10}$ ?

- A.  $\frac{1}{2}$
- B.  $\frac{3}{5}$
- C.  $\frac{2}{3}$
- D.  $\frac{4}{5}$

5. What is the prime factorization of 72?

- A.  $3^2 \times 2^3$
- B.  $6 \times 3 \times 2^2$
- C.  $3^3 \times 2^2$
- D.  $3^2 \times 4 \times 2$

6. Which statement is true about the quotient of  $\frac{1}{4}$  divided by 2?

- A. It is half of  $\frac{1}{4}$ .
- B. It is two less than  $\frac{1}{4}$ .
- C. It is two more than  $\frac{1}{4}$ .
- D. It is twice as great as  $\frac{1}{4}$ .

7. One cup of Nutty Flakes cereal contains 8% of the recommended daily allowance of calcium. What is 8% written as a decimal?

- A. 8.0
- B. 0.8
- C. 0.08
- D. 0.008

8. What is the next number in the pattern below?

0.29, 0.58, 0.87, 1.16, 1.45, 1.74, 2.03,   ?

9. Compute:

$$\frac{5}{6} - \frac{1}{4}$$

## Mathematics (Calculator)

10. Jake wrote numbers on cards to make the pattern shown below.

25.6	26.4	26.1	26.9	26.6	27.4	27.1
------	------	------	------	------	------	------

What number will be next in this pattern?

- A. 26.3
  - B. 26.8
  - C. 27.4
  - D. 27.9
11. Bridget combined two equilateral triangles at one side to make a quadrilateral. Which quadrilateral did she make?
- A. rhombus
  - B. rectangle
  - C. hexagon
  - D. square

12. Mr. Jackson took his students bowling. He recorded the scores of his students in the stem-and-leaf plot shown below.

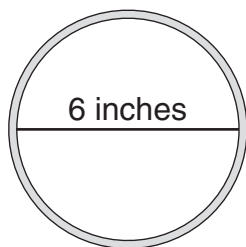
6	4 5 6
7	5 7 8 8 9
8	1 1 3
9	0 4 8

**Key:** 6 | 4 = 64

How many students had a score less than 83?

- A. 8
  - B. 9
  - C. 10
  - D. 11
13. Which equation **must** be true for any value of  $t$ ?
- A.  $18t = 18 \div t$
  - B.  $18 - t = 18 + t$
  - C.  $6 + 0 + t = 6 + t$
  - D.  $0 - t = 0 + t$

14. Ned used a piece of wire to make the circular hoop shown below.



About how long is the wire? (Use 3.14 for  $\pi$ .)

- A. 19 inches  
B. 28 inches  
C. 38 inches  
D. 113 inches
15. The front-page layout of a school newspaper is divided into three sections, as shown below.

Advertisements $\frac{1}{5}$ page	News $\frac{1}{2}$ page
Photography ?	

What fraction of the front page is photography?

- A.  $\frac{3}{10}$   
B.  $\frac{3}{5}$   
C.  $\frac{7}{10}$   
D.  $\frac{4}{5}$

16. Jane went shopping for school supplies and spent \$16.26.

- She bought 3 notebooks.
- Each notebook cost the same amount.
- She bought a lunchbox for \$9.99.

Which equation can be used to find the cost,  $n$ , of one notebook?

- A.  $n - \$9.99 = \$16.26$   
B.  $n + \$9.99 = \$16.26$   
C.  $3n + \$9.99 = \$16.26$   
D.  $3n - \$9.99 = \$16.26$

17. Laura is putting a cloth border along the outside edge of a rectangular mirror that is 11 inches long and 17 inches wide. What is the distance around the mirror?

- A. 187 square inches  
B. 187 inches  
C. 56 square inches  
D. 56 inches

18. Jill is making a scale drawing of a room that is 24 feet wide. The scale she is using is shown below.

$$1 \text{ inch} = 8 \text{ feet}$$

What should be the width of the room in the scale drawing?

- A. 3 inches  
B. 10 inches  
C. 32 inches  
D. 192 inches

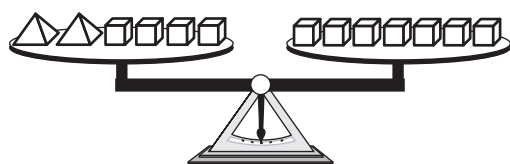
19. Jessica wants to frame a picture. Her choices for frame size, shape, and color are shown in the chart below.

Size	Shape	Color
Small	Rectangle	Green
Medium	Circle	White
Large		Black
		Red

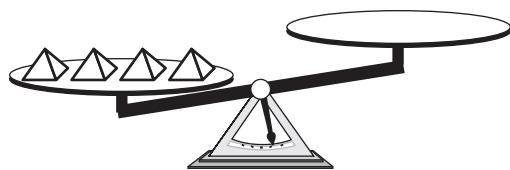
How many different ways can Jessica choose one size, one shape, and one color for her frame?

- A. 6
- B. 9
- C. 18
- D. 24


20. Look at the two scales shown below.























Scale 1



Scale 2

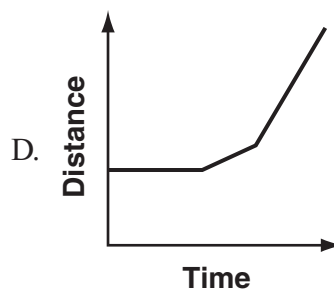
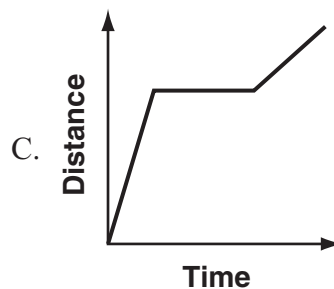
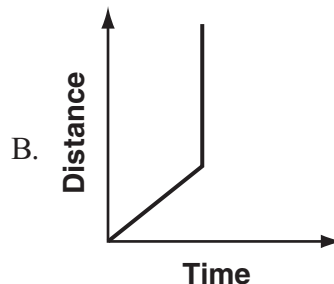
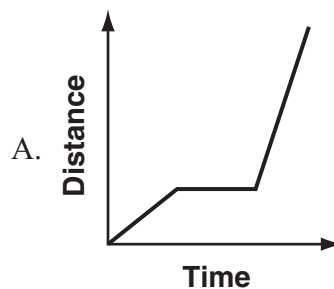
Scale 1 is balanced. How many  are needed to balance Scale 2?

- A.   
- B.    
- C.      
- D.       

21. Danielle rode her bike to school.

- She began riding slowly.
- She stopped to talk to a friend for a few minutes.
- She then rode very quickly so that she would not be late for school.

Which graph could show Danielle's trip to school?



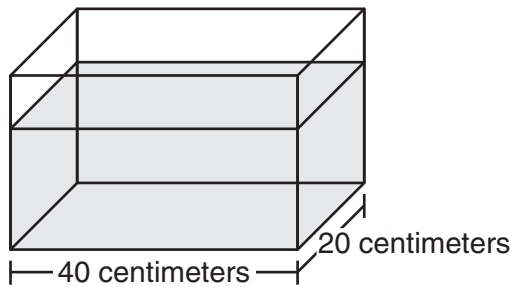


22. What is the value of  $x$  in the equation below?

$$x - 3.5 = 14$$

- A. 49
- B. 17.5
- C. 10.5
- D. 4

23. Carlos has the fish tank shown below.



**Volume of Rectangular Prism**

$$V = l \times w \times h$$

Carlos fills the fish tank with water to a height of 30 centimeters. What is the volume of the water in the fish tank?

- A. 2,600  $\text{cm}^3$
- B. 5,200  $\text{cm}^3$
- C. 15,600  $\text{cm}^3$
- D. 24,000  $\text{cm}^3$

24. The writers for a school newspaper want to predict the number of students who will vote in the next student council election. Which group would be the **best** to survey?

- A. all students who write for the newspaper
- B. students who are part of the student council
- C. students from different grades during a lunch period
- D. all sixth-grade students when they are in their homeroom

25. Look at the pattern below.



What will be the 30th shape in this pattern?

A. ☆

B. ○

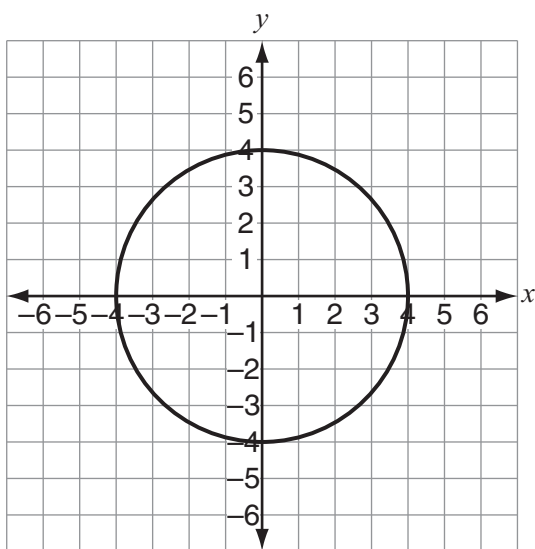
C. △

D. □

26. It is estimated that the human brain has 100,000,000,000 nerve cells. Which expression shows another way to write 100,000,000,000?

A.  $1 \times 10^9$   
B.  $1 \times 10^{10}$   
C.  $1 \times 10^{11}$   
D.  $1 \times 10^{12}$

27. Look at the circle on the coordinate grid below.



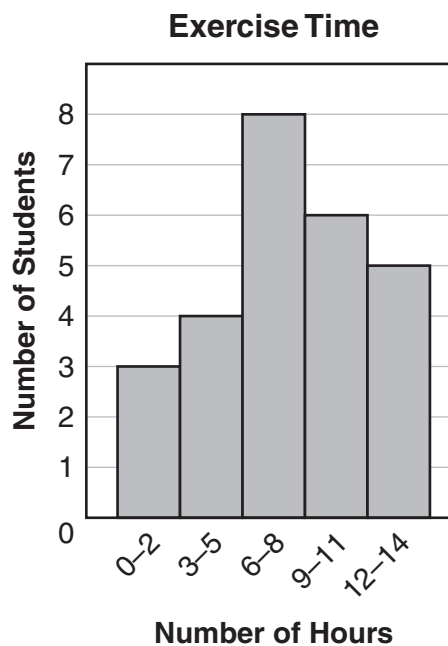
Which ordered pair could represent a point **inside** the circle?

A. (2, 4)  
B. (0, -3)  
C. (-1, -6)  
D. (-4, 5)

28. Luisa surveyed 25 students from her school and found that  $\frac{1}{5}$  of them had more than one hour of homework each night. There are 275 students in her school. Based on Luisa's survey, how many students can be expected to have more than one hour of homework each night?

A. 87  
B. 55  
C. 33  
D. 11

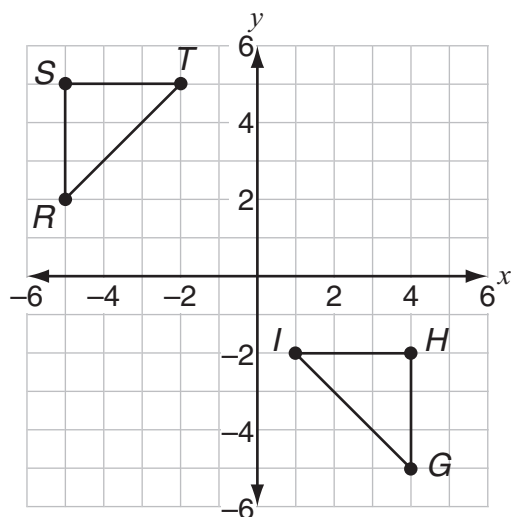
29. The histogram below shows the number of hours the students in Mr. Hogan's class exercised last week.



What is the total number of students who exercised less than 9 hours last week?

A. 6  
B. 11  
C. 15  
D. 21

30. Copy the coordinate grid and triangles  $RST$  and  $GHI$  below into your Answer Booklet.



- On the coordinate grid in your Answer Booklet, reflect (flip) triangle  $RST$  over the  $y$ -axis. Label the new triangle  $JKL$ .
- Describe the transformations that would move triangle  $JKL$  to its image, triangle  $GHI$ .
- Rotate (turn) triangle  $GHI$   $90^\circ$  clockwise about point  $I$ . Then translate (slide) the image two units to the left. Label the new triangle  $XYZ$ .

## Scoring Guide

Score	Description
4	4 points
3	3 points
2	2 points
1	1 point
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

## Scoring Notes

Part a: 1 point correct drawing of triangle  $JKL$

Part b: 2 points correct description of transformations

or

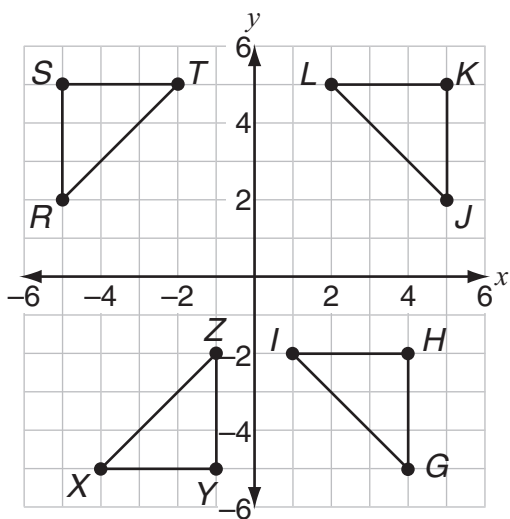
correct answer based on incorrect part a

OR

1 point some correct strategy shown in describing a transformation of triangle  $JKL$

Part c: 1 point correct drawing of triangle  $XYZ$

## Sample Responses:



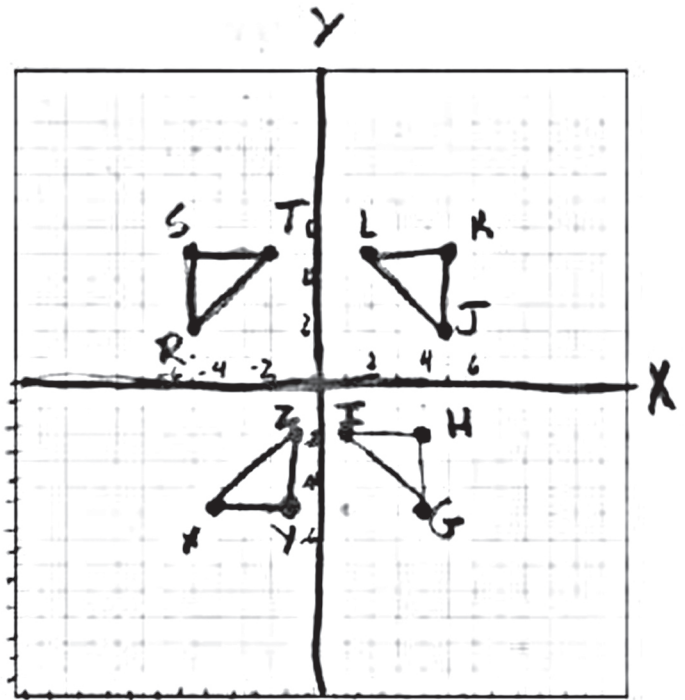
a and c.

b. Translate triangle  $JKL$  7 units down and 1 unit to the left.

Example of Score Point 4

Sample 1

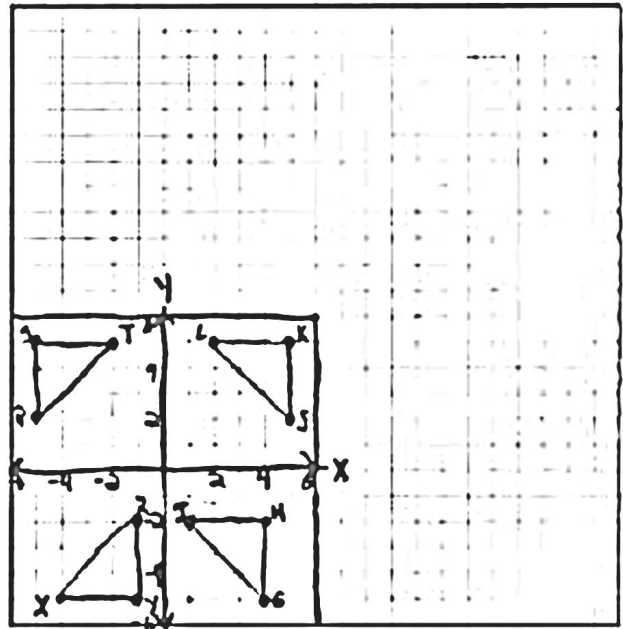
B. In order to move JKL to GHI's position you would have to slide it down 7 notches and move it one notch to the left.



Example of Score Point 4

Sample 2

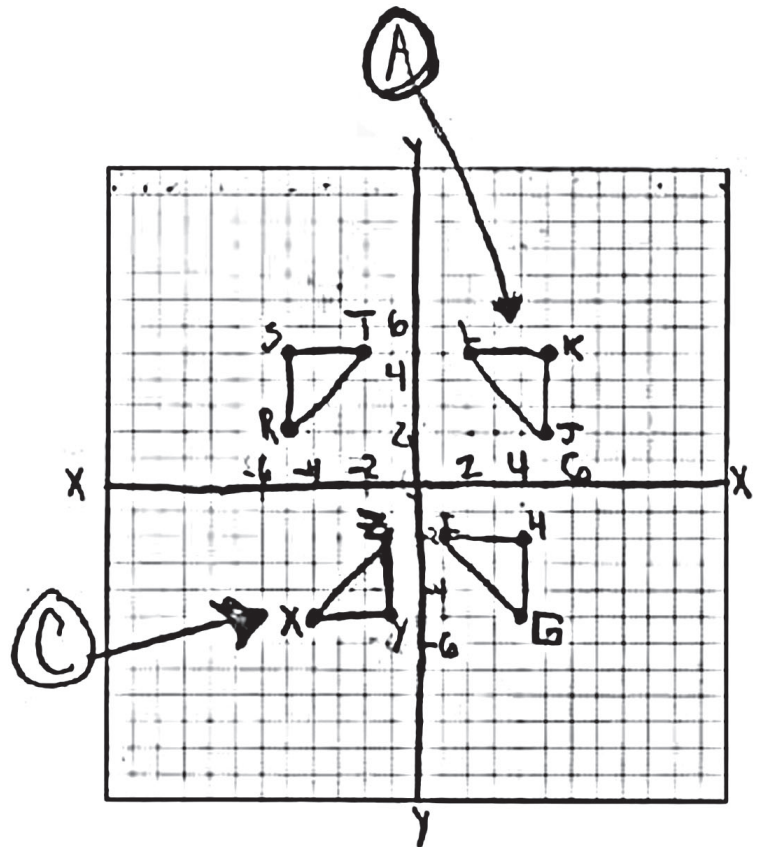
b. To move triangle JKL to its image, triangle GHI, you would have to slide triangle JKL 1 unit left and 7 units down.



Example of Score Point 3

Sample 1

Ⓑ You would slide it to the left 1 unit and  
down 8 units.

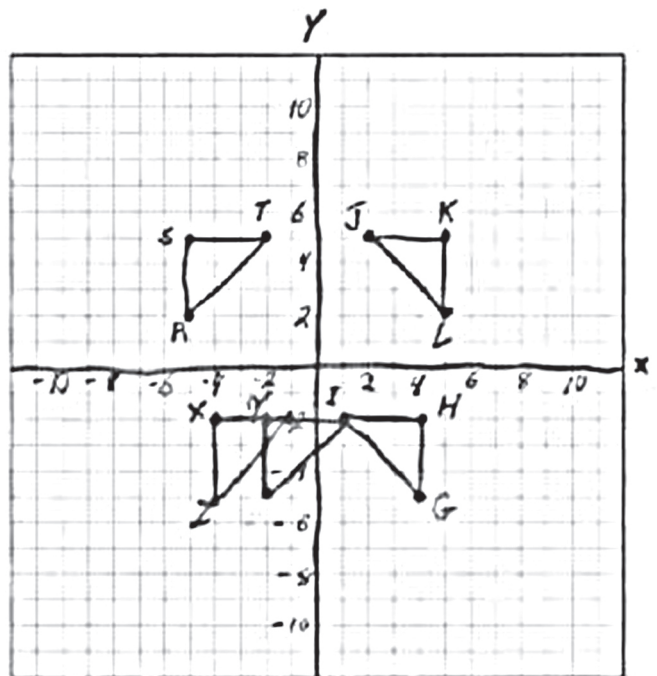




Example of Score Point 3

Sample 2

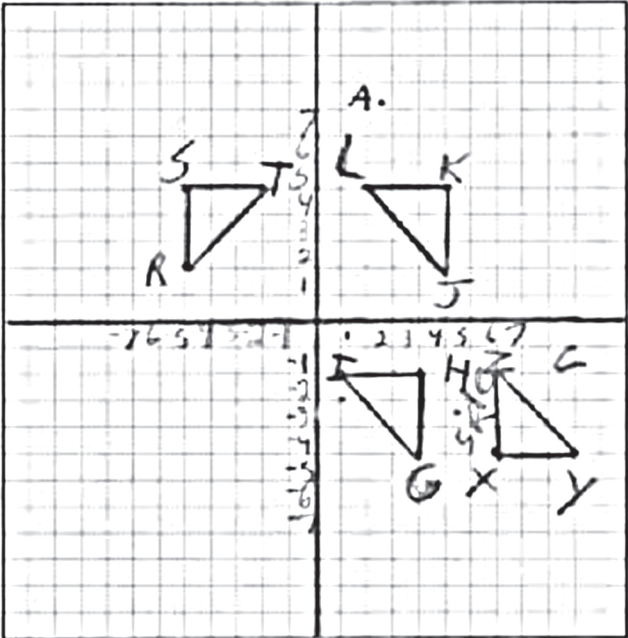
Ⓐ 7 down, 1 left



Example of Score Point 2

Sample 1

B. slide the figure



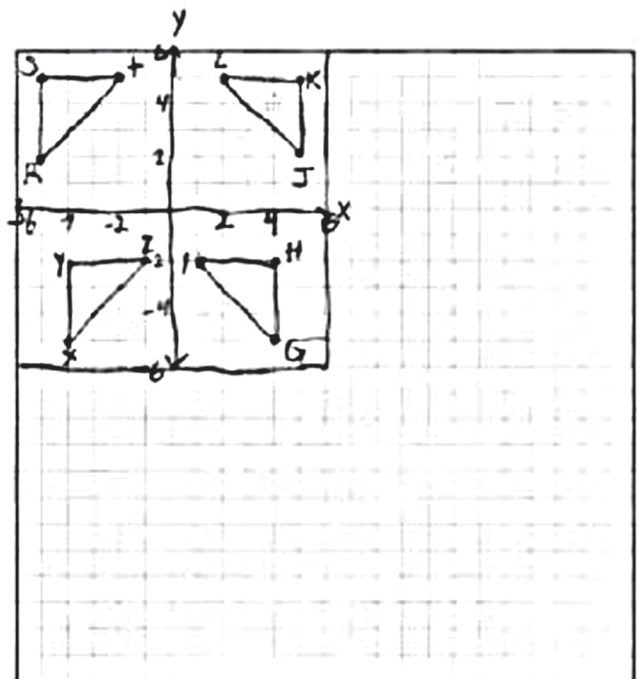
Example of Score Point 2

Sample 2

a. on grid

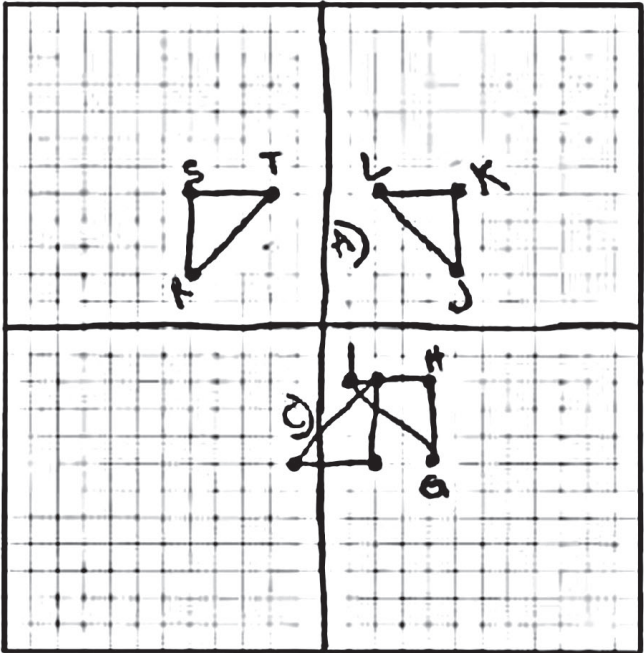
b. You would flip triangle  
JKL over the x axis and  
slide it to the left 1 unit  
to create its "image" GHI

c. on grid



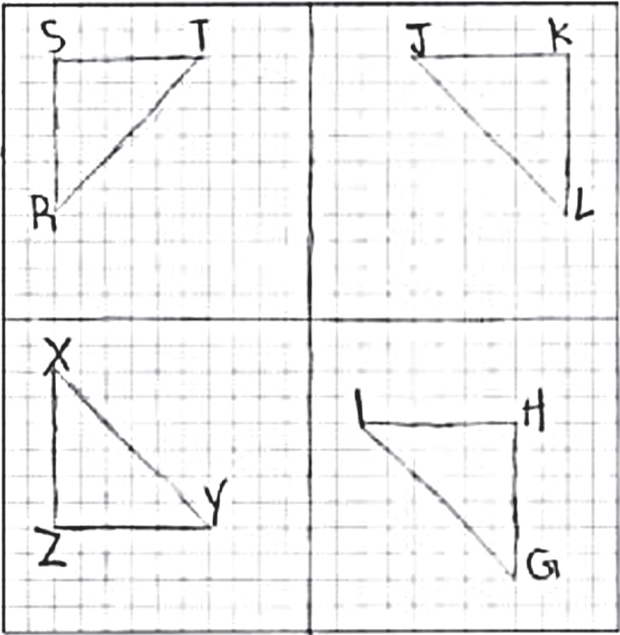
Example of Score Point 1

Sample 1



Example of Score Point 1

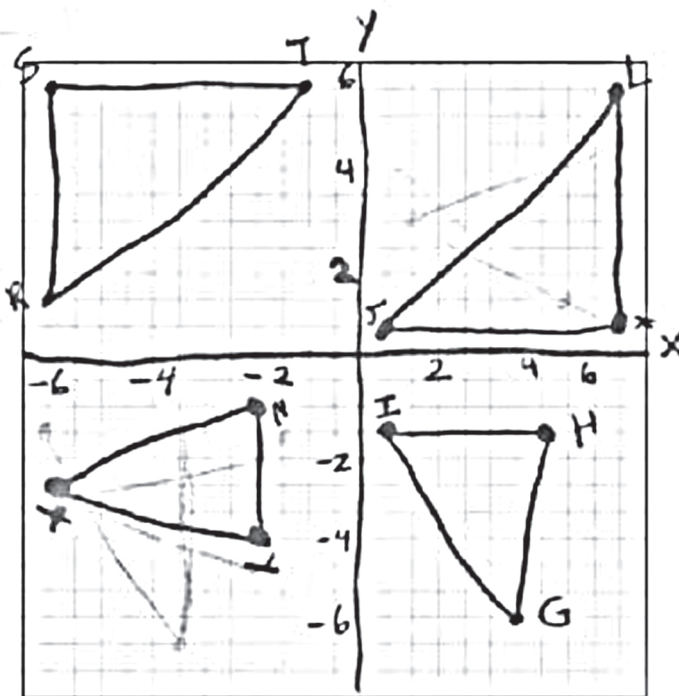
Sample 2



Example of Score Point 0

Sample 1

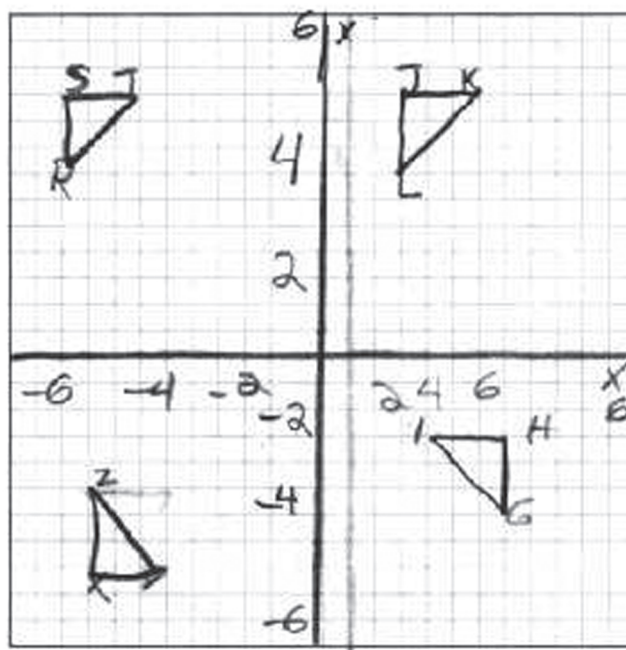
b. You would have to shift it to the left.



Example of Score Point 0

Sample 2

b. All you got to do is in your mind just flip it over then find where you put it.



# Acknowledgments

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